

1 **(August 4, 2003)**

2 **Fabric Pad Bearing**

3 The fabric pad bearing consists of an upper unit and a lower unit. The upper
4 unit includes a stainless steel sheet and either a single sole plate or upper and
5 lower sole plates, as shown in the Plans. The lower unit includes a
6 polytetrafluorethylene (PTFE) sheet, a steel backing plate, and a preformed
7 fabric pad, and may also include a masonry plate, as shown in the Plans.
8 Lower unit components of transverse restrainer bearings shall be as shown in
9 the Plans. The upper and lower units shall be supplied by a single bearing
10 manufacturer.

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12 **Shop Drawings**

13 The Contractor shall submit shop drawings to the Engineer for approval in
14 accordance with Section 6-03.3(7). These drawings shall include but not
15 be limited to the following information:

- 16
17 1. Plan and elevation of the bearing showing dimensions and
18 tolerances.
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20 2. Complete details of all components and sections showing all
21 materials incorporated into the bearing.
22
23 3. All AASHTO, ASTM or other material designations.
24
25 4. Bearing manufacturer's recommendations and procedures for
26 bearing assembly shipment and storage.
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28 The Contractor shall not begin fabricating the fabric pad bearings until
29 receiving the Engineer's approval of the shop drawings.
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31 **Flatness and Manufacturing Tolerances**

32 Flatness of bearing surfaces shall be determined by the following method:

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34 1. A precision straightedge, longer than the nominal dimension to
35 be measured shall be placed in contact with the surface to be
36 measured as parallel to it as possible.
37
38 2. A feeler gauge having an accuracy equal to the tolerance
39 allowed $\pm .001$ inch, shall be selected and inserted under the
40 straightedge.
41
42 3. Surfaces are acceptable for flatness if the feeler gauge does not
43 pass under the straightedge.
44
45 4. In determining the flatness, the straightedge may be located in
46 any position on the surface being measured.
47

48 Flatness tolerances shall be defined as follows:

- 49
50 1. Class A tolerance = $0.0005 \times \text{nominal dimension}$
51
52 2. Class B tolerance = $0.001 \times \text{nominal dimension}$

3. Class C tolerance = $0.01 \times \text{nominal dimension}$

(Nominal dimension shall be taken as the actual dimension of the plate or sheet under the straightedge, in inches.)

Manufacturing tolerances for the bearings are as follows:

PTFE Sheet

Plan dimensions: Total nominal design area -0, +1/8"
Thickness: -0", + 1/64"
Flatness: Class B tolerance, both surfaces

Stainless Steel Sheet

Plan dimensions: -0", +3/16"
Flatness: Class B tolerance, both surfaces

Sole Plate

Plan dimensions: -0", +3/16"
Thickness: -1/16", +3/16"
Flatness: Class B tolerance, side in contact with the
Stainless Steel or sole plate
Class C tolerance, side in contact with
epoxy gel, grout, or concrete

Steel Backing Plate

Plan dimensions: -0", +3/16"
Thickness: -0", +3/16"
Width and length
of recess: -0", +1/16", of PTFE sheet size
Flatness: Class B tolerance, both surfaces

Fabric Pad

Plan dimension: -0", +3/16"
Thickness: -1/16", +3/16"
Surface finish: For preformed fabric pads fabricated from
multiple layers, the vertical face shall be free
of visible horizontal displacement between
the individual layers.

Masonry Plate & Bars

Plan dimension: -0", +3/16"
Thickness: -0", +3/16"
Flatness: Class B Tolerance, side in contact with
masonry plate or bars.
Class C tolerance,
free side or side in contact with grout.

Overall Height

Total thickness: -0, +10 percent

Bearing Component Assembly, Shipping, and Storage

The stainless steel sheet shall be seal welded all around to the sole plates using the gas tungsten-arc welding process (GTAW) in accordance with applicable AWS recommended practices. The seal weld shall not protrude beyond the surface of the stainless steel. The stainless steel sheet shall be clamped down to have full contact with the sole plate during welding.

The lower contact surface of the PTFE sheet shall be bonded to the steel backing plate with epoxy specified by the PTFE manufacturer.

All exposed steel plate surfaces, including the stainless steel sheet to sole plate weld but excluding stainless steel surfaces, shall be painted in accordance with Section 6-03.3(30) as supplemented in these Special Provisions.

The Contractor shall protect the bearing assemblies from all damage, and exposure to the elements, during shipment and storage prior to installation in accordance with the manufacturer's recommendations and procedures listed in the shop drawings as approved by the Engineer.

Bearing Assembly Field Inspection and Installation

Field inspection of a representative number of bearing assemblies will be performed by the Engineer. The Contractor shall provide a clean, dry, and enclosed area at the site, spacious enough for the field inspection activities. The Engineer will identify the bearing assemblies to be inspected and the Contractor shall do all the necessary work to allow the Engineer to inspect the bearing assemblies.

The sliding surfaces shall be finished true, lubricated and installed level, or installed as shown in the Plans for transverse restrainer bearings.

PTFE sheet shall not be greased, except as otherwise noted. A thin uniform film of silicone grease shall be applied to the entire dimpled PTFE sheet before installation.

For cast-in-place concrete superstructures, the fabric pad bearing upper unit shall be anchored to the structure as shown in the Plans. For precast concrete superstructures with fabric pad bearing upper units with upper and lower sole plates, the upper sole plate shall be cast into and anchored to the precast concrete member as shown in the Plans.

The upper units of fabric pad bearings for steel superstructures, and the lower sole plate assemblies for precast concrete superstructures shall be set with epoxy gel as specified below just before setting the superstructure in place.

The sole plate top surface in contact with the epoxy gel shall receive a thin uniform film of silicone grease, to prevent bonding to the epoxy gel. The anchor bolts and insert threads shall be greased to prevent bonding and allow future removal. The Contractor shall apply the epoxy gel by troweling it into the concrete recess, or onto the bottom of the steel

1 superstructure or upper sole plate surface, and immediately bolt the upper
2 unit of the bearing in place to obtain a level surface. Before the epoxy gel
3 has cured, the superstructure shall be set in place, squeezing out excess
4 epoxy gel while filling the entire recess. Excess epoxy and grease shall
5 be removed immediately. Special care shall be exercised at all times to
6 ensure protection of the stainless steel and PTFE surfaces from coming in
7 contact with concrete or any other foreign matter. After the epoxy gel has
8 cured, the anchor bolts shall be tightened to snug tight.
9
10 The grout pad, and masonry plate (when shown in the Plans), shall be
11 installed level. When shown with a masonry plate, the grout pad shall be
12 pressure installed starting at the middle of the masonry plate.
13
14 All forms and debris that tend to interfere with the free action of the
15 bearing assemblies shall be removed at the time falsework and forms are
16 removed.